

ABSTRACT OF THE DISCLOSURE

A storage virtualization environment is provided that includes a system for dynamically updating a virtual volume in associated with a host system. The system may include a set of storage devices, each of which includes physical block addresses that store data associated with the virtual volume and a network switch system connecting the host system and the set of storage devices. In one embodiment, the network switch system includes a set of storage processors each maintaining virtual volume objects including at least one of (i) first tier objects reflecting a relationship between the physical block addresses and one or more logical partitions of virtual volume data, and (ii) second tier objects reflecting a logical configuration of the virtual volume. Further, the network switch system uses the virtual volume objects to dynamically update the virtual volume during runtime of the network switch system.